

Without Volvo's last-minute rejection of merger with Renault a couple of years ago, there would have been no 850 TDI. True, there might well have been an 850 diesel, but instead of Audi's glorious 2.5 litre 140bhp direct injection turbo diesel it would have had to make do with Renault's forthcoming 115bhp 2.2 litre turbodiesel.

Which just goes to show there's something to be said for independence. The moment the merger was off, Volvo lost no time in asking Audi if it would be prepared to supply its five-cylinder TDI engine. The surprise, perhaps, is that Audi not only said yes, but agreed to supply the latest 140bhp version – thereby playing midwife to a formidable competitor for its own A6 TDI.

The interesting question is whether Volvo has made as good a job of creating an upmarket diesel express as Audi, whose A6 was 1995 *Diesel Car of the Year*. If so, it looks to be in a strong position because the 850 TDI starts at £21,000, compared with £23,238 for the 140bhp A6 TDI (though that includes a six-speed gearbox, worth £411).

Having got the go ahead to buy the Audi engine, Volvo had the major task of making it fit. Not only did the TDI engine have to be matched with Volvo's own slimline 5-speed gearbox, it had to be installed transversely instead of in-line. That the development work was achieved so quickly says a lot for the flexibility of a comparatively small and nimble company.

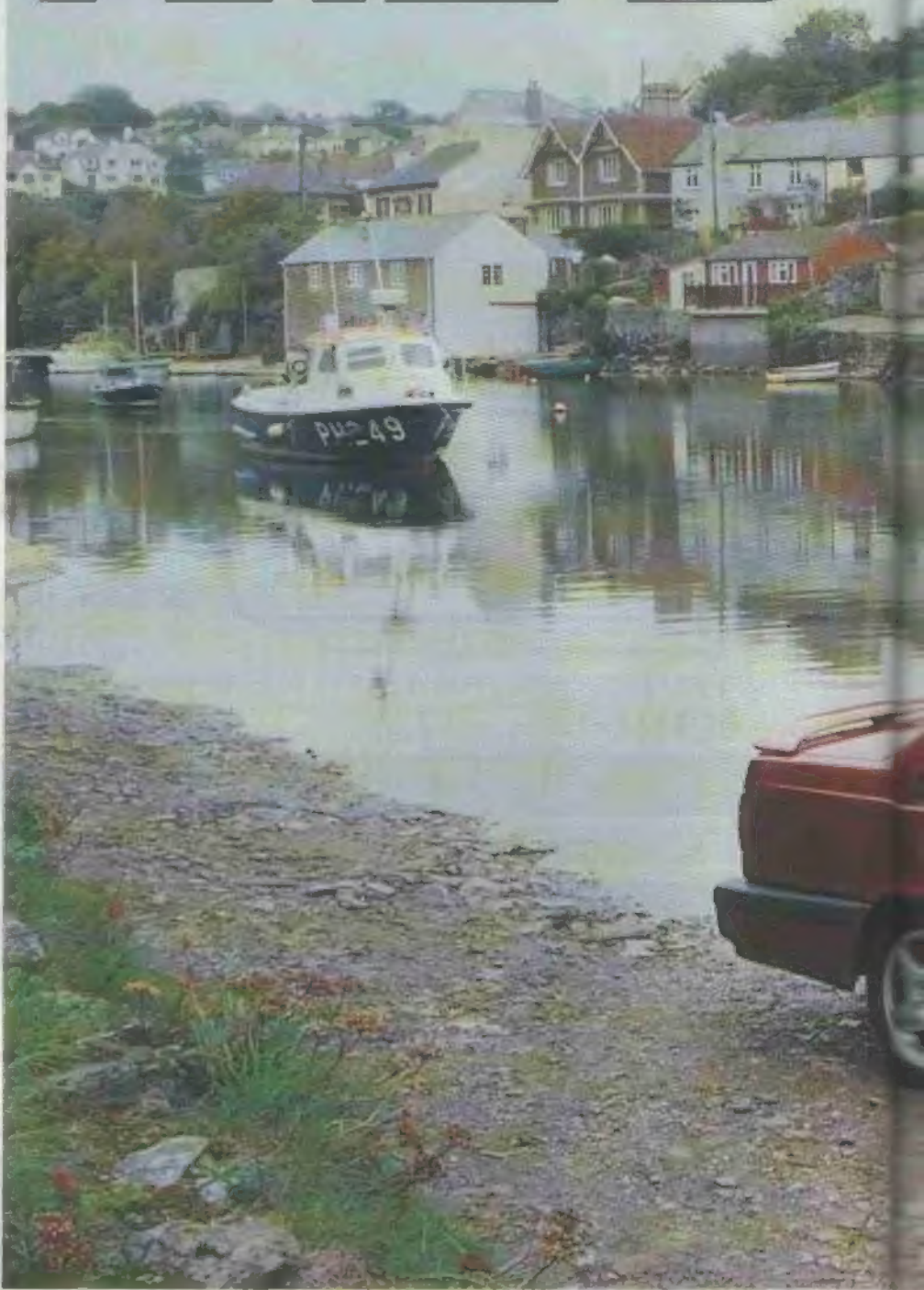
Apart from the engine, Volvo has made no major changes to the 850. Spring and damper rates have been revised to accommodate the modest 40kg extra weight, but that's about it. The 850 is of course a comparatively new design, launched in 1992. It was the first full-size Volvo with front wheel drive, and with its new 5-cylinder petrol engines it soon won an un-Volvo-like reputation as a real driver's car. Which explains why, when it came to a diesel 850, the 5-cylinder Audi engine made so much sense.

Volvo sets a base price for each model, with a menu of alternative higher specifications to choose from. In the case of the 850 TDI, these higher specs range from S at £1,400 to CD at £4,600, taking in SE (£1,700) and GLT (£3,200) on the way. On top of that, a four-speed automatic transmission will be offered in the Spring.

Even the base model is reasonably well equipped, with ABS brakes, remote central locking, electric front windows and a comprehensive safety package all standard. The pre-production car tested here didn't correspond exactly to any of the designated trim levels, but came closest to a GLT.

At £24,200, the 850 TDI GLT faces quite an array of competition. The models most likely to feature on a shortlist alongside the

Directly AHEAD



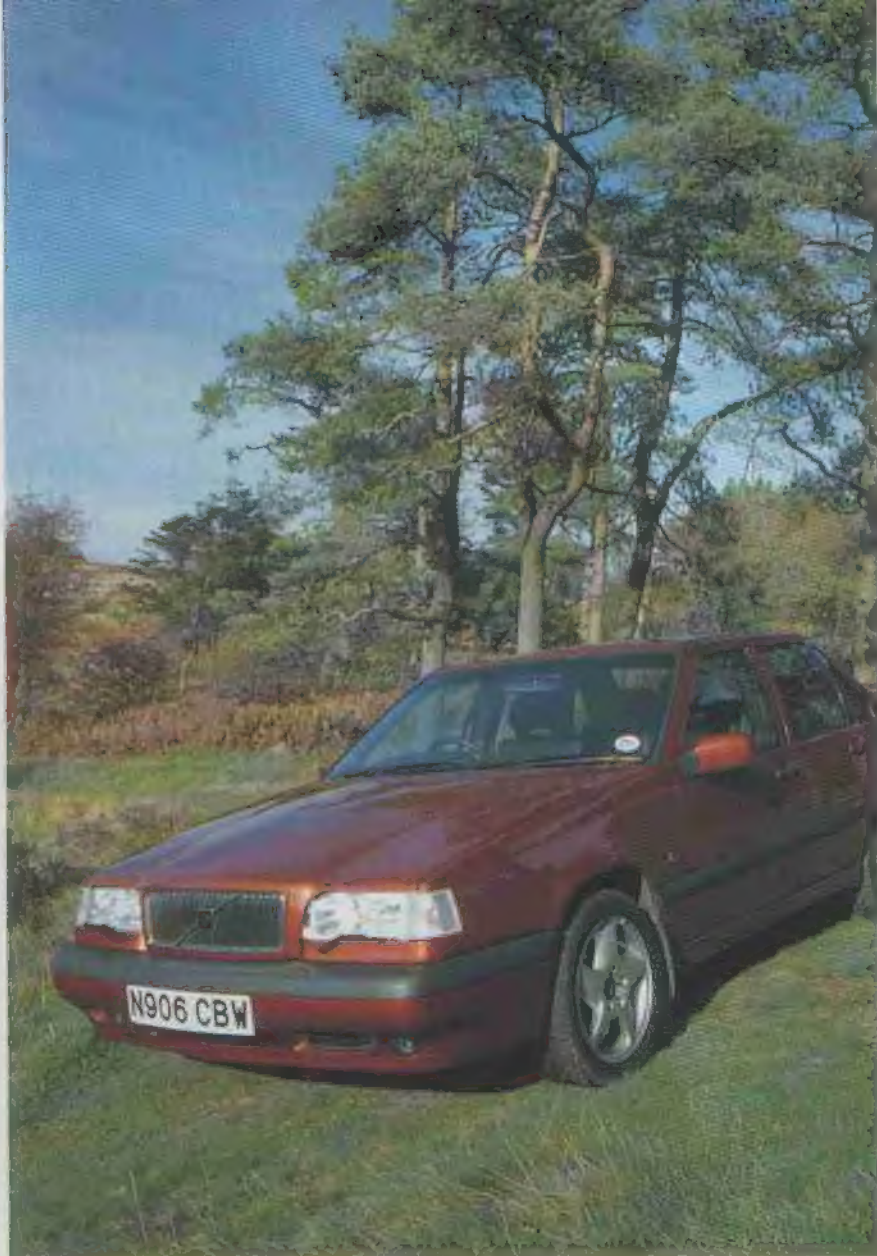
Buying one of the world's most advanced and effective direct injection engines for the 850 should have allowed Volvo to leap-frog ahead of the opposition. Has the 850 TDI worked out like that?



VOLVO 850 TDI GLT



"There's a sort of muscular, no-holds-barred feel to the engine's power delivery, backed up by a deep-chested-growl when it's working hard"



Volvo are the Audi A6 TDI, BMW 525 tds (£23,395), Vauxhall Omega CD (£22,550) and perhaps the Citroen XM 2.5 TD VSX (£22,305). All of these are quick, sophisticated diesels with 130bhp or more – there are plenty of other big diesels (including the Volvo 940 TD at a bargain basement £18,100), but all are slower and less powerful.

PERFORMANCE

Diesel cars seldom shine in the 0-60mph dash, simply because they usually need a change into third gear on the way, whereas quick petrol cars will get there in second (or occasionally first). Whether people who choose cars on the basis of 0-60 times then drive around at 60mph in second is of course another question...

So for the 850 TDI to get to 60mph in under ten seconds is quite an achievement: in fact, it becomes only the third car we've ever tested to do so. Despite initial wheel-spin on the patchily wet test track, the big Volvo reached 60mph in 9.9 seconds and – for the record – went on to reach 100mph in 29.0 seconds.



In real life, of course, what matters is what happens when you put your foot down while driving along, and here the 850 really shines. Despite high gearing (30.1mph per 1,000rpm in top, and 22.5 in fourth), the in-gear acceleration times are excellent. For instance, it covers the 30 to 50mph increment in fourth in 7.7 seconds, despite having to pick up from only 1,300rpm, and goes on to cover 50 to 70mph in the same gear in 6.1 seconds. Even in fifth, that last increment takes only 8.9 seconds.

Despite its boxy looks, the 850 has a competitively low drag coefficient of 0.31. Even so, it's a little behind the equivalent Audi on top speed, averaging 124.8mph round the Millbrook high speed circuit; the A6 managed exactly 4mph more, simply because of its higher gearing – at 125mph, the Volvo's engine is turning at 4,150rpm, some 150rpm above the power peak.

On the road, the Volvo feels every bit as quick as these figures suggest. There's a sort of muscular, no-holds-barred feel to the engine's power delivery, backed up by a deep-chested growl when it's working hard.

All very enjoyable, in fact – and made all the more so by the complete absence of any embarrassing smokes, even during flat-out acceleration.

As usual with direct injection engines, there's only the briefest of glowplug delays – about a second on chilly autumn mornings – and the engine then starts instantly.

ECONOMY

What makes the Audi engine such a paragon of diesel virtue is its unrivalled combination of performance and economy. The big Volvo averaged an outstanding 39.5mpg over our test period, including all

that 125mph running and acceleration testing at Millbrook. The rest of the time we took full advantage of its performance, too, so gentler driving should yield well over 40mpg (it's worth bearing in mind, incidentally, that the odometer under-reads by 1.5 per cent – in other words, for every 100 miles recorded, the car has actually covered 101.5).

The fuel tank capacity of 73 litres (16 gallons) should be good for a range of around 630 miles. With a big, near-vertical filler the tank is quick and easy to brim.

NOISE

Anyone accustomed to the harsh diesel clatter when you start a Volvo 940 TD from cold will find the 850 TDI almost miraculously subdued by comparison. That's a highly flattering comparison, though, and in truth the change from in-line to transverse installation has slightly increased tickover noise and vibration from the Audi engine compared with the A6 TDI. Oddly enough, this right hand drive car suffered much less from tickover vibration than the left hand cars we



VOLVO 850 TDI GLT

	VOLVO 850 TDI GLT	AUDI A6 2.5 TDI SE 140	BMW 525tds SE	CITROËN XM 2.5 TD VSX	MERCEDES C220D ELEGANCE	PEUGEOT 605 SRdt	ROVER 825 SLD	VAUXHALL OMEGA 2.5TD CD
List Price £	24,200	25,174	25,590	22,305	23,250	20,990	22,995	22,550
PERFORMANCE								
Maximum speed(mph)	125	129	127	125	112	118	119	127
0-60mph (secs)	9.9	9.8	10.2	10.8	12.6	12.2	11.9	10.7
30-50 (4th)	7.7	6.8	8.4	6.7	9.9	7.4	9.8	7.7
50-70 (5th)	8.9	8.4/12.1*	10.1	9.3	14.9	10.2	11.6	11.0
ENGINE								
Cubic capacity	2460	2460	2498	2455	2155	2088	2500	2498
bhp@rpm	140/4000	140/4000	143/4800	130/4300	95/5000	110/4300	118/4200	130/4500
Torque(lbs ft@rpm)	218/1900	214/1900	192/2200	217/2000	111/3600	183/2000	198/2100	184/2200
MPH/1000 rpm (top)	80.1	28.9/33.0*	27.9	27.3	23.0	27.3	29.0	20.1
ECONOMY								
Overall test MPG	39.5	41.0	31.4	32.6	38.4	35.0	36.4	35.3
Govt MPG ₁	46.7	46.3	39.6	39.6	40.1	41.9	43.1	37.4
Fuel tank(l/gal)	73/16.0	80/17.6	80/17.6	80/17.6	62/13.6	80/17.6	68/15.0	75/16.5
Range (miles)	630	720	550	570	520	600	540	580
INSTRUMENTS								
Speedometer ₂	67.0	66.4	67.3	67.7	66.3	n/a	66.7	68.4
Odometer ₃	101.5	100.0	100.0	99.0	100.0	97.1	102.0	102.6
INTERIOR (in metres, min/max)								
Front legroom	0.85/1.05	0.86/1.07	0.85/1.03	0.92/1.11	0.85/1.06	0.88/1.13	0.87/1.05	0.85/1.09
Rear kneeroom	0.72/0.93	0.71/0.93	0.69/0.82	0.76/0.94	0.62/0.91	0.77/0.99	0.74/0.93	0.71/0.95
Combined legroom ₄	1.77	1.78	1.72	1.87	1.75	1.83	1.79	1.80
Interior width	1.44	1.43	1.41	1.45	1.38	1.47	1.39	1.47
DIMENSIONS/WEIGHT (metres/kilogrammes)								
Length	4.67	4.79	4.72	4.71	4.48	4.72	4.88	4.79
Width	1.76	1.78	1.75	1.79	1.72	1.80	1.73	1.80
Height	1.39	1.43	1.41	1.39	1.41	1.42	1.39	1.46
Wheelbase	2.66	2.69	2.76	2.85	2.69	2.80	2.77	2.73
Kerb weight	1403	1460	1480	1587	1400	1430	1495	1599
STEERING								
Turns lock to lock	3.2	3.4	3.5	3.2	3.5	3.2	3.2	3.1
Turning circle	10.6	11.5	11.1	11.7	10.7	11.2	12.3	10.3
COSTS								
Service hours/50,000 miles	TBA	10.3	10.0	12.7	8.5	12.0	9.5	9.8
Insurance group	13	16	15	14	11	12	11	15

KEY: 1 Govt mpg calculated as 2x urban, 1x constant 56mph, 1x constant 75mph divided by 4. 2 Actual speed at indicated 70mph. 3 Actual distance at indicated 100 miles. 4 Maximum front legroom plus minimum rear knee-room. * In 5th/6th gears



Mobil CLEANERBURN Diesel Plus

Fuel quality affects performance, economy and exhaust emissions. That's why in all our road tests we use a single top-quality fuel, Mobil Cleanerburn Diesel Plus, which produces up to 3 per cent more engine power than other fuels and up to 80 per cent less black smoke.

drove on the 850 TDI launch in France, so perhaps for once there's some benefit in our eccentric positioning of wheel and pedals.

If the 850 is no better than average in refinement at tickover, it becomes very smooth indeed as speed rises. At a genuine 70mph it's purring along almost inaudibly at just 2,325rpm with the accelerator barely depressed. It's equally quiet when trickling around town or accelerating gently, but drop a gear or two and floor the accelerator and the engine responds with that delightful growl; it gives you the best of both worlds, really.



Dashboard design is a bit slabby, but works well



Rear cabin is roomy; built-in child seat is standard on GLT. Boot is big and versatile



There's very little wind noise, and even with the very low profile 50-section Pirelli P-Zeros fitted to the test car, less road noise than on most rivals.

ON THE ROAD

The 850 starts out with a good basic driving position – seat, wheel and pedals are all well aligned, with no posture-twisting offsets – and adds pretty well all the adjustability you could ask for. The test car came with electric adjustment for the driver's seat (standard on the CD; £550 extra on other models) providing front/rear tilt as well as seat height, reach and backrest angle. The steering wheel moves both up-

and-down and in-and-out, and there's a variable lumbar support pad.

Even with all this adjustment, legroom isn't outstanding by big car standards – the long-legged will need the seat in its lowest, furthest-back position with the wheel as high as it will go to fit in comfortably. But that's our only reservation; in all other respects this is a superbly comfortable car for the driver, with an ideal seat – generously proportioned and supportive, but not as assertively hard as in a Mercedes – plenty of room around the pedals and a neat, nicely sized leather covered wheel. Armrests in the centre and door trim (part of the SIPS package) further enhance the feeling of all-

round support.

The instrument panel looks a little basic – in fact, the whole fascia design is a bit slabby and mid-Atlantic – with just a rev counter and water temperature gauge to supplement the speedo and fuel gauge (which, unusually, is marked in gallons/litres rather than fractions of a tank-full). But there's a good trip computer (standard from SE trim up), giving a fairly accurate readout of instant and average fuel consumption, as well as range, average speed and outside temperature.

The gearlever isn't outstandingly light or precise, but it's well up to the class average, ideally positioned and gives foolproof gear selection; the medium-weight clutch takes up drive smoothly.

On its 16-inch alloy wheels and 205/50 Pirelli P-Zeros the 850 TDi sticks like glue; its front tyres simply don't start to lose grip and understeer at the speeds you expect. ▶

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VOLVO 850 TDi GLT

Even in the wet, it tracks round without a sign of slip at speeds where most cars would be scrabbling and sliding.

If the 850's roadholding is exceptional, so is its handling. The steering is quick, not too light and reasonably informative – you get a good idea of what the front tyres are up to and how much grip is available. There isn't much roll, and the whole car has a stable, strapped-down feel that inspires confidence. It's very enjoyable, too – the exceptional handling complements the meaty power delivery perfectly. The all-round disc brakes provide effective stopping power from high speeds, with the ABS system working well on low-grip surfaces.

Visibility is good all round once on the move, but the high, be-spoilered tail and rear head restraints make reversing into a parking space a bit tricky.

COMFORT

The 850's neat, compact styling conceals a passenger cabin that's at least the equal of several more bulbous models in space and comfort. The rear seat is wide and comfortable, with good head and kneeroom, a drop-down centre armrest and three full lap-and-diagonal seat belts.

You expect electric seat heating in the front of a big Volvo, but the 850 TDI provides it for two in the back as well – it starts to work within a minute or two, and that warm glow is surprisingly welcome on a dank autumn morning.

There's a firm, well-damped feel to the Volvo's ride, but it's less knobbly over broken surfaces than you might expect with those ultra low profile tyres. It absorbs bigger bumps effectively, and the total ride package is good, helped by the thick, resilient feel of the seats.

We didn't have much opportunity to test the cooling properties of the air conditioning in this autumn test, but the five big fascia vents deliver plenty of filtered air. The driver's-side centre vent has an 'airmix' control, allowing almost unheated air to be selected with the heater and other vents delivering hot air – believe it or not, Volvo's research



has discovered that fresh air helps to keep drivers alert (and we aren't poking fun at Volvo – most carmakers, it seems, have yet to make this connection). As you would expect in a car from Scandinavia, the heater rapidly delivers copious amounts of hot air.

EQUIPMENT AND FINISH

Apart from the rather drab dash, the cabin trim looks and feels stylish and durable. There's a preponderance of slightly gloomy dark greys and blacks, but it's relieved by a pleasantly light cloth headlining.

Given the wide choice of trim packages, equipment levels on the 850 are very much what you choose to make them. The GLT, for instance, has a sporting bias with alloy wheels, spoiler, TRACS traction control system and those five-spoke alloys with low-profile tyres – but it also adds air conditioning, an electric glass sunroof and an integrated rear child seat.

What does single the 850 out from the crowd is its safety package. There's the usual safety cage with crush zones, side impact bars and so on, along with a driver's airbag (surprisingly, a passenger airbag is £310 extra across the range) and front seat-belt pretensioners. But there's also Volvo's

SIPS side-impact protection system, which in the 850 includes side airbags. These are mounted in the outside edges of the front seats, roughly from waist to shoulder height, to protect the upper body in a side impact; they should also give some head protection by pushing the seat occupant inwards, away from the B-post.

One consequence of the energy-absorbing doors is that there isn't much room left for door pockets – there aren't any in the back doors, and at the front they're short and small. But there's a good-sized glove-box (when there's no airbag) and a shallow lidded bin in the centre, with two pop-out cupholders; behind, there are soft seat-back pockets.

The boot is excellent. There's a separate handle and lock for the lid, which carries a warning triangle and lifts right up to the vertical, revealing a boot that's high, wide and long. There's little wheelarch intrusion, and it's unusually wide behind the wheelarches, with the boot width extending right up to the bodywork.

The rear seat is asymmetrically split and folds down onto the cushion, with no need to remove the head restraints. The resulting hatchway is big enough to slide something like a reasonable-sized bookshelf through.

VERDICT

When you match an outstanding car with an outstanding engine, you expect impressive results – and in the case of the 850 TDI, you certainly get them. There's no doubt it's one of the world's outstanding diesel cars, which is quite an achievement when you consider the speed with which it was developed.

But is it better than the Audi A6 TDI? In some ways, yes. It's more of a driver's car, thanks to its outstanding handling, and it's also a little roomier for passengers. On the other hand, the A6 is quieter and a little quicker and more economical, thanks largely to its six-speed gearbox. In the end, the choice between these two outstanding cars boils down to personal preference – but it's worth bearing in mind the Volvo's significant price advantage.

IN SERVICE

The bonnet has one of those convenient stick-out safety catches, and rises easily on twin gas struts. There's a plastic engine cover which would have to be moved to get at the glowplugs and injectors, but all the routine checks are straightforward. The red-handled dipstick is right at the front, and all the fluid reservoirs are translucent for quick checking. The oil and fuel filters are easy to reach.

Service and oil-change intervals are 10,000 miles – the same as on petrol 850s – and insurance groups are 12 except for the GLT and CD which are a group higher. ■

VOLVO 850 TDI GLT